Mark Sussman

List of Publications by Year
in descending order

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70 papers	9,177 citations	201674 27 h-index	144013 57 g-index
72 all docs	72 docs citations	72 times ranked	4192 citing authors

#	Article	IF	Citations
1	A Level Set Approach for Computing Solutions to Incompressible Two-Phase Flow. Journal of Computational Physics, 1994, 114, 146-159.	3.8	3,887
2	A Coupled Level Set and Volume-of-Fluid Method for Computing 3D and Axisymmetric Incompressible Two-Phase Flows. Journal of Computational Physics, 2000, 162, 301-337.	3.8	1,317
3	An improved level set method for incompressible two-phase flows. Computers and Fluids, 1998, 27, 663-680.	2.5	648
4	An Adaptive Level Set Approach for Incompressible Two-Phase Flows. Journal of Computational Physics, 1999, 148, 81-124.	3.8	560
5	An Efficient, Interface-Preserving Level Set Redistancing Algorithm and Its Application to Interfacial Incompressible Fluid Flow. SIAM Journal of Scientific Computing, 1999, 20, 1165-1191.	2.8	493
6	A second order coupled level set and volume-of-fluid method for computing growth and collapse of vapor bubbles. Journal of Computational Physics, 2003, 187, 110-136.	3.8	451
7	A sharp interface method for incompressible two-phase flows. Journal of Computational Physics, 2007, 221, 469-505.	3.8	327
8	Axisymmetric free boundary problems. Journal of Fluid Mechanics, 1997, 341, 269-294.	3.4	204
9	A Stable and Efficient Method for Treating Surface Tension in Incompressible Two-Phase Flow. SIAM Journal of Scientific Computing, 2009, 31, 2447-2471.	2.8	83
10	A computational study of the effect of initial bubble conditions on the motion of a gas bubble rising in viscous liquids. International Journal of Multiphase Flow, 2005, 31, 223-237.	3.4	79
11	A parallelized, adaptive algorithm for multiphase flows in general geometries. Computers and Structures, 2005, 83, 435-444.	4.4	70
12	A Coupled Level Set-Moment of Fluid Method for Incompressible Two-Phase Flows. Journal of Scientific Computing, 2013, 54, 454-491.	2.3	68
13	Investigation of drop impact on dry and wet surfaces with consideration of surrounding air. Physics of Fluids, 2016, 28, .	4.0	67
14	Compressible, multiphase semi-implicit method with moment of fluid interface representation. Journal of Computational Physics, 2014, 279, 182-217.	3.8	66
15	A hybrid level set-volume constraint method for incompressible two-phase flow. Journal of Computational Physics, 2012, 231, 6438-6471.	3.8	52
16	Animation and control of breaking waves. Computer Animation and Simulation, 2004, , .	0.0	48
17	Simulation of twoâ€phase flow with subâ€scale droplet and bubble effects. Computer Graphics Forum, 2009, 28, 229-238.	3.0	45
18	Adaptive solution techniques for simulating underwater explosions and implosions. Journal of Computational Physics, 2008, 227, 2083-2104.	3.8	44

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19	An embedded level set method for sharp-interface multiphase simulations of Diesel injectors. International Journal of Multiphase Flow, 2014, 59, 1-14.	3.4	44
20	A second order primitive preconditioner for solving all speed multi-phase flows. Journal of Computational Physics, 2005, 209, 477-503.	3.8	43
21	Robust numerical analysis of the dynamic bubble formation process in a viscous liquid. International Journal of Multiphase Flow, 2011, 37, 1059-1071.	3.4	40
22	Textured Liquids based on the Marker Level Set. Computer Graphics Forum, 2007, 26, 457-466.	3.0	38
23	An Improved Sharp Interface Method for Viscoelastic and Viscous Two-Phase Flows. Journal of Scientific Computing, 2008, 35, 43-61.	2.3	38
24	A Discontinuous Spectral Element Method for the Level Set Equation. Journal of Scientific Computing, 2003, 19, 479-500.	2.3	33
25	The buoyancy-driven motion of a single skirted bubble or drop rising through a viscous liquid. Physics of Fluids, 2012, 24, .	4.0	33
26	Incompressible multiphase flow and encapsulation simulations using the momentâ€ofâ€fluid method. International Journal for Numerical Methods in Fluids, 2015, 79, 456-490.	1.6	31
27	The sensitivity of drop motion due to the density and viscosity ratio. Physics of Fluids, 2010, 22, .	4.0	28
28	Filament capturing with the Multimaterial Moment-of-Fluid method. Journal of Computational Physics, 2015, 285, 149-172.	3.8	27
29	A numerical study of the thermal transient in high-pressure diesel injection. International Journal of Multiphase Flow, 2017, 88, 205-221.	3.4	25
30	Towards an Efficient, High-Fidelity Methodology for Liquid Jet Atomization Computations. , 2010, , .		23
31	A three-dimensional numerical study on the dynamics and deformation of a bubble rising in a hybrid Carreau and FENE-CR modeled polymeric liquid. Journal of Non-Newtonian Fluid Mechanics, 2019, 265, 66-78.	2.4	18
32	A computational study of the dynamic motion of a bubble rising in Carreau model fluids. Fluid Dynamics Research, 2010, 42, 025501.	1.3	17
33	A method for overcoming the surface tension time step constraint in multiphase flows II. International Journal for Numerical Methods in Fluids, 2012, 68, 1343-1361.	1.6	17
34	Three-Dimensional Numerical Simulations of the Motion of a Gas Bubble Rising in Viscous Liquids. Journal of Chemical Engineering of Japan, 2004, 37, 968-975.	0.6	14
35	Comparison of simulation and experiments for multimode aerodynamic breakup of a liquid metal column in a shock-induced cross-flow. Physics of Fluids, 2019, 31, .	4.0	14
36	Direct Numerical Simulation of the Slow Formation Process of Single Bubbles in a Viscous Liquid. Journal of Chemical Engineering of Japan, 2007, 40, 939-943.	0.6	13

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37	Numerical Simulations of a Bubble Rising through a Shear-Thickening Fluid. Journal of Chemical Engineering of Japan, 2012, 45, 713-720.	0.6	12
38	Influence of the viscosity ratio on drop dynamics and breakup for a drop rising in an immiscible low-viscosity liquid. Journal of Fluid Mechanics, 2014, 752, 383-409.	3.4	12
39	Three-Dimensional Numerical Simulations of a Rising Bubble in a Viscoelastic FENE-CR Model Fluid. AIP Conference Proceedings, 2008, , .	0.4	10
40	Three-Dimensional Computations of the Motion of a Newtonian Drop Rising through Immiscible Quiescent Shear-Thinning Liquids. Journal of Chemical Engineering of Japan, 2006, 39, 394-400.	0.6	10
41	An Adaptive Mesh Algorithm for Free Surface Flows in General Geometries. , 2001, , .		9
42	Interaction of two-phase flow with animated models. Graphical Models, 2008, 70, 33-42.	2.4	8
43	Numerical investigation of surface curvature effect on the self-propelled capability of coalesced drops. Physics of Fluids, 2020, 32, 122117.	4.0	8
44	Fluid-structure interaction of thin flexible bodies in multi-material multi-phase systems. Journal of Computational Physics, 2021, 429, 110008.	3.8	8
45	Three-Dimensional Simulations of the Dynamic Motion of Single Drops Rising in Viscoelastic FENE-CR Model Fluids. Journal of Chemical Engineering of Japan, 2009, 42, 705-712.	0.6	7
46	A Space-Time Discontinuous Galerkin Spectral Element Method for Nonlinear Hyperbolic Problems. International Journal of Computational Methods, 2019, 16, 1850093.	1.3	7
47	Simulation of drop impact on substrate with micro-wells. Physics of Fluids, 2022, 34, .	4.0	7
48	An Adaptive Coupled Level Set and Moment-of-Fluid Method for Simulating Droplet Impact and Solidification on Solid Surfaces with Application to Aircraft Icing. , 2016, , .		6
49	Atrioventricular Blood Flow Simulation Based on Patient-Specific Data. Lecture Notes in Computer Science, 2009, , 386-395.	1.3	6
50	Three-Dimensional Numerical Simulations of the Effect of Initial Bubble Conditions on the Motion of a Bubble Rising in Viscous Liquids. Journal of Chemical Engineering of Japan, 2005, 38, 878-882.	0.6	6
51	Density-Scaled Balanced Continuum Surface Force Model with a Level Set Based Curvature Interpolation Technique. International Journal of Computational Methods, 2016, 13, 1641004.	1.3	5
52	New Multi-implicit Spaceâ€“Time Spectral Element Methods for Advectionâ€“Diffusionâ€“Reaction Problems. Journal of Scientific Computing, 2019, 78, 653-686.	2.3	5
53	A moment-of-fluid method for diffusion equations on irregular domains in multi-material systems. Journal of Computational Physics, 2020, 402, 109017.	3.8	5
54	High-Fidelity Simulation of Atomization and Evaporation in a Liquid Jet in Cross-flow. , 2011, , .		4

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55	A space-time discontinuous Galerkin spectral element method for the Stefan problem. Discrete and Continuous Dynamical Systems - Series B, 2018, 23, 3595-3622.	0.9	4
56	Interaction of an Oscillating Flexible Plate and Nucleate Pool Boiling Vapor Bubble: Fluid-Structure Interaction in a Multimaterial Multiphase System. , 2018, , .		4
57	A Hierarchical Space-Time Spectral Element and Moment-of-Fluid Method for Improved Capturing of Vortical Structures in Incompressible Multi-phase/Multi-material Flows. Journal of Scientific Computing, 2019, 81, 1527-1566.	2.3	4
58	Three-Dimensional Simulations of Vortex Ring Formation from Falling Drops in an Immiscible Viscous Liquid. Journal of Chemical Engineering of Japan, 2009, 42, 648-655.	0.6	4
59	Depletable micro-layer for nucleate boiling simulations in micro-gravity conditions: A new approach. International Journal of Heat and Mass Transfer, 2022, 190, 122642.	4.8	4
60	Experimental and Numerical Investigation of Icing Process of a Liquid Droplet. , 2017, , .		3
61	A Second Order JFNK-Based IMEX Method for Single and Multi-Phase Flows. , 2011, , 549-554.		3
62	A New Method for Estimating Bubble Diameter at Different Gravity Levels for Nucleate Pool Boiling. Journal of Heat Transfer, 2022, 144, .	2.1	3
63	Simulation of Charge and Mass Distributions of Indium Droplets Created by Field Emission. , 2006, , .		2
64	A High-Fidelity Study of High-Pressure Diesel Injection. , 0, , .		2
65	A Novel Supermesh Method for Computing Solutions to the Multi-material Stefan Problem with Complex Deforming Interfaces and Microstructure. Journal of Scientific Computing, 2022, 91, 1.	2.3	2
66	Boundary Integral Formulation of Electric Fields in Level Set Simulations of Charged Droplets. , 2005, , .		1
67	Numerical Analysis of Gas-Liquid Bubble Flow in a Horizontal Rectangular Channel. Journal of Chemical Engineering of Japan, 2012, 45, 102-106.	0.6	1
68	Simulations of Gas-Liquid Two-Phase Jet Flows Using the Moment of Fluid Method. , 2013, , .		0
69	10.1063/1.5099589.3. , 2019, , .		0
70	10.1063/1.5099589.1. , 2019, , .		0